

### Abstract of the Disclosure

A packet processing method for exchanging packet data through a plurality of layers is disclosed, that comprises the steps of storing the entire packet to a packet memory; and storing part of each packet of the packet data used in processes of a layer 2 processing portion and a layer 3 processing portion of the plurality of layers to a multi-port shared memory, the layer 2 processing portion and the layer 3 processing portion accessing the same memory space of the multi-port shared memory. In addition, a pipeline processing system is used so that when the layer 2 processing portion and the layer 3 processing portion access the shared memory, they do not interfere with each other.